

ABSTRACT OF THE DISCLOSURE

[0044]           An apparatus having a smart material actuator, a support structure and at least one temperature compensating material insert, either externally mounted to the support structure, integrally formed with the support structure, or any combination thereof. The apparatus includes a mechanically leveraged electrically stimulated smart material. The support structure and actuator are susceptible to the effects of differences in thermal coefficients of expansion of the materials used in the construction. The smart material typically displaces less than 0.001 inches and is leveraged up to fifty times to obtain useful movement. The temperature effect on the smart material is therefore leveraged and amplified producing undesirable motion in the apparatus with ambient and/or operating temperature changes. A method for dimensioning and placement of a compensating insert with respect to the support structure provides an accurate and cost effective compensating insert.